AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. Contract ID Code	Page	Of
Cost-Plus-Fixed-Fee	1	15

2. Amendment/Modification No.	3. Effective Date	4. Requisition/Purchase Req No.	5. Project No. (If applicable)
P00002	2003MAY19	SEE SCHEDULE	

6. Issued By Code W56HZV

TACOM
AMSTA-AQ-ABGB
ROBERT BEARDSLEE (586)574-8071
WARREN, MICHIGAN 48397-5000
HTTP://CONTRACTING.TACOM.ARMY.MIL
EMAIL: BEARDSLR@TACOM.ARMY.MIL

7. Administered By (If other than Item 6) Code S3605A

DCMA DAYTON
AREA C, BUILDING 30
1725 VAN PATTON AVENUE
WRIGHT PATTERSON AFB, OH 45433-5302

SCD C **PAS** NONE **ADP PT** SC1012

8. Name And Address Of Contractor (No., Street, City, County, State and Zip Code)

THE LEXINGTON CARBON COMPANY, LLC
LEXCARB, LLC
3130 LAMAR DRIVE
1501 BULL LEA ROAD, SUTIE 102
LEXINGTON KY 40502

TYPE BUSINESS: Other Small Business Performing in U.S.

Code 1SL92 **Facility Code**

☐ **9A. Amendment Of Solicitation No.**

9B. Dated (See Item 11)

☒ **10A. Modification Of Contract/Order No.**
DAAE07-02-C-L055

10B. Dated (See Item 13)
2002MAY08

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ **The above numbered solicitation is amended as set forth in item 14. The hour and date specified for receipt of Offers**
☐ **is extended,** ☐ **is not extended.**

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing items 8 and 15, and returning _____ copies of the amendments: (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. Accounting And Appropriation Data (If required)
ACRN: AC NET INCREASE: $500,000.00

13. THIS ITEM ONLY APPLIES TO MODIFICATIONS OF CONTRACTS/ORDERS

KIND MOD CODE: G

It Modifies The Contract/Order No. As Described In Item 14.

☐ **A. This Change Order is Issued Pursuant To: The Changes Set Forth In Item 14 Are Made In The Contract/Order No. In Item 10A.**

☐ **B. The Above Numbered Contract/Order Is Modified To Reflect The Administrative Changes (such as changes in paying office, appropriation data, etc.) Set Forth In Item 14, Pursuant To The Authority of FAR 43.103(b).**

☒ **C. This Supplemental Agreement Is Entered Into Pursuant To Authority Of:** FAR 43.103(a)(3)

☐ **D. Other (Specify type of modification and authority)**

E. IMPORTANT: Contractor ☐ **is not,** ☒ **is required to sign this document and return _____ copies to the Issuing Office.**

14. Description Of Amendment/Modification (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

SEE SECOND PAGE FOR DESCRIPTION

Except as provided herein, all terms and conditions of the document referenced in item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. Name And Title Of Signer (Type or print)		16A. Name And Title Of Contracting Officer (Type or print)	
		WYMAN E. YOUNG II YOUNGE@TACOM.ARMY.MIL (586)574-8093	
15B. Contractor/Offeror	**15C. Date Signed**	**16B. United States Of America**	**16C. Date Signed**
_____ **(Signature of person authorized to sign)**		**By** /SIGNED/ **(Signature of Contracting Officer)**	2003MAY19

SECTION A - SUPPLEMENTAL INFORMATION

CONTRACT FOR: The Design, Fabrication, Test and Delivery of Three (3) Versions of the Water Recovery Unit (WRU) System

MODIFICATION FOR: To Make Changes, with an Equitable Adjustment of the Contract, by Deleting Fabrication and Delivery of one (1) Prototype WRU for the HMMWV and Adding Design, Fabrication and Delivery of one (1) Prototype WRU for a (Non-Line-of-Sight-C) Future Combat System Demonstration Vehicle

Prior Contract Value Amount: $2,571,773
Amount This Action: $ 548,652
Total Contract Value Amount: $3,120,425

Prior Obligated Amount: $1,837,732
Amount Obligated This Action: $ 500,000
Total obligated Amount: $2,337,732

A Modification P00002, a Supplemental Agreement, incorporates the following into the contract:

1. This Modification P00002 deletes the Scope of Work requirements to fabricate, install/connect, test/analyze, display/demonstrate, and deliver one (1) WRU prototype system for a U.S. Army High Mobility Multi-Purpose Wheeled Vehicle (HMMWV, type or equivalent). The Contract is downward adjusted in the total amount of $762,630 broken out as Estimated Cost: $699,661 and Fixed Fee: $62,969 for this deleted effort. The changes to the Scope of Work for the deleted effort, are included in Section C, attached to this modification.

2. This Modification P00002 adds the Scope of Work requirements to design, fabricate and deliver one (1) Water Recovery Unit (WRU) prototype system for a Non-Line-of-Sight Cannon (NLOS-C) Future Combat System (FCS) demonstration vehicle (type or equivalent). The Contract is increased in the total amount of $1,311,282 broken out as Estimated Cost: $1,203,011 and Fixed Fee: $108,271 for this new effort. The changes to the Scope of Work for the new effort, are included in Section C, attached to this modification.

3. As a result of these changes, Modification P00002 also revises the Contract DAAE07-02-C-L055 hardware and data delivery schedules as shown in the attached Section F, Exhibit A and Attachment 002.

4. The net total amount of the changes defined in this Modification is $548,652 broken out as Estimated Cost: $503,350 and Fixed Fee: $45,302.

5. Modification P00002 adds Section G-4 clause G.1 Contractor Special Billing Instructions, and G.2 DFAS: Special Payment Instructions.

6. In Section B (Supplies or Services and Prices/Costs) under CLIN 0001 increase the Contract Amounts, the Estimated Cost, Fixed Fee, and Total Amount as follows to add the Net Cost and Fee for the changes to the contract:

	Previous Contract Amounts	Net Cost & Fee of Change (Mod. P00002)	Revised Contract Amounts
Est. Cost:	$2,359,425	$503,350	$2,862,775
Fixed Fee:	$ 212,348	$ 45,302	$ 257,650
Total Amount:	$2,571,773	$548,652	$3,120,425

7. The Incremental funding amount of $500,000 is obligated on contract. As a result the following changes are made to the contract in Section B and copies of the changes are attached to this Modification:

a. Add SubCLIN 0001AC in Contract Section B (Supplies or Services and Prices/Costs), to account for the amount of $500,000 of incremental funding added to the contract.

b. In Section B, Paragraph B.3.2, Incremental Funding Schedule, change the amount in the line of "Jan 2003 through Jan 2004" by increasing the funding to be provided by $500,000 from $1,233,557 to $1,733,557. Change the amount in the line of "Jan 04 through Contract Completion" by increasing the funding to be provided by $48,652 from $734,041 to $782,693. Also change the Total by increasing it by $548,652, from $2,571,773 to $3,120,425.

c. In Section B, Paragraph B.4, Funds Allotted, change the amount of funds allotted to the contract by $500,000 from $1,837,732 to $2,337,732, to account for the additional Incremental funding obligated to the contract by this modification.

8. In Section G, Contract Administration Data: The attached Section G page is hereby added to the contract incorporating the new accounting and appropriation data into the contract as a result of increasing the funding under the contract.

9. In Section G, Special Contract Requirements change paragraph H.19 as follows:

a. Delete the sentence "By 30 Sep 03, the Government will provide the Contractor with an Army HMMWV (i.e., a second HMMWV), for use in performing this contract." Replace this sentence with "Under this Modification P00002 the Government will no longer provide the Contractor with a second Army HMMWV for use in performing this Contract."

B. In consideration of this Modification P00002 agreed to as complete equitable adjustment, the Contractor releases the Government from any and all liability under this contract for any future equitable adjustments attributable to such facts or circumstances giving rise to this Modification P00002. As a result the the Total Amount Obligated on contract is increased by $500,000 from $1,837,732 to $2,337,732 and the Total Contract Value is increased by $548,652 from $2,571,773 to $3,120,425. Except for the changes resulting from this Modification P00002, all other terms and conditions, as previously modified, remain unchanged.

*** END OF NARRATIVE A 002 ***

Name of Offeror or Contractor: THE LEXINGTON CARBON COMPANY, LLC

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS				
0001	SERVICES LINE ITEM SECURITY CLASS: Unclassified Contractor shall furnish all the supplies and services to accomplish the task specified in Section C "Scope of Work." Est.Cost: $2,862,775 * Fixed Fee: $ 257,650 * Total Amount: $3,120,425 * * Changed by Mod P00002 (End of narrative B001)				
0001AC	SERVICES LINE ITEM NOUN: LEXCARB DAAE07-02-C-L055 PRON: E132C336EH PRON AMD: 01 ACRN: AC AMS CD: 622601H9111 SubCLIN 0001AC added by Mod. P00002 (End of narrative B001) Inspection and Acceptance INSPECTION: Destination ACCEPTANCE: Destination Deliveries or Performance DLVR SCH REL CD: 001 — QUANTITY: 0 — PERF COMPL DATE: SEE SECTION F $ 500,000.00		EA		$ 500,000.00

B.1 Estimated Cost and Payment

B.1.1 The estimated cost for performance of the work required under this contract is as stated in Section B Schedule.

B.1.2 The Contractor will be paid for the fixed fee stated in Section B under CLIN 0001 for the performance of work under the Contract and in accordance with the terms of the Contract Clause entitled, "FIXED FEE," (Apr 1984), FAR 52.216-8. The fixed fee together with the reimbursement of cost shall constitute full and complete consideration for the Contractor's service in connection with the work required and performed under this Contract.

B.1.3 Allowable cost shall be determined, and payment shall be provided, in accordance with the Contract Clause entitled, "ALLOWABLE COST AND PAYMENT."

B.2 Payment

The Contractor may submit public vouchers every two weeks for payment under this Contract. The fee will be payable at the time of reimbursement of cost at the same rate as the total Contract fee bears to the total estimated cost, subject to any withholding pursuant to provisions of this Contract.

B.3 Funding

B.3.1 The Government shall provide funds under this Contract covering the estimated cost and fee, on an incremental basis as provided for in the following funding schedule and pursuant to the Contract Clause entitled, "LIMITATION OF FUNDS." It is estimated that the incremental amounts are sufficient for the performance of work in each cited period. The Government may, at its discretion, allot such funds on an incremental basis within each fiscal year. The Contractor shall plan and execute the work required by this Contract to expend and/or commit funds compatible with the funding schedule below. Whenever the Contractor has reason to believe the funds allotted to this contract for any fiscal year are either insufficient or excessive for performing the work required in that fiscal year, the Contractor shall notify the Government.

B.3.2 Incremental Funding Schedule

Performance Period	Amount
Award through Jan 2003:	$ 604,175
Jan 2003 through Jan 2004:	$1,733,557 *
Jan 04 through Contract Completion:	$1,282,693 *
Total:	$3,120,425 *

B.4 Funds Allotted. The amount of funds currently allotted to this Contract are $2,337,732. *

B.4.1 For the purpose of the Contract clause, "LIMITATION OF FUNDS," the total amount allotted by the Government to the Contract shall be the amount of funds allotted in paragraph B.4 above.

B.4.2 In performing this Contract, the Contractor is not obligated to incur costs, including fee, in excess of the amount of funds allotted to the Contract, as shown in this clause, nor is the Government obligated to reimburse the Contractor for cost and fee in excess of the amount of funds allotted to the Contract by the Government.

* Revised by Modification P00002

*** END OF NARRATIVE B 001 ***

SECTION C - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

C.1.0 BACKGROUND

This follow-on project continues a competitively selected Small Business Innovation Research (SBIR) Phase I (Contract DAAE07-98-C-X023) and II (Contract DAAE07-99-C-L018) research and development effort awarded to LexCarb LLC (then known as Advanced Separation and Adsorption Products, Inc.) So far LexCarb has proved it's possible to recover and purify High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) engine exhaust to drinking water standards. Now, they will try to make a smaller, more efficient Water Recovery Unit (WRU) prototype system that still meets drinking water standards. Moreover, LexCarb must ascertain the individual components in the purified water, since the source water may contain contaminants not traditionally identified during standard drinking water analysis. LexCarb also plans to use the knowledge gained thus far to design and build a WRU prototype system for two other end items: (i) a U.S. Army 30 kW Tactical Generator Set, and (ii) a Non-Line-of-Sight Cannon (NLOS-C) Future Combat System (FCS) demonstration vehicle. None of these water recovery and purification systems exist in the commercial marketplace today, but the aim is to research, develop, and perfect the prototypes toward commercialization. *

C.2.0 PHASE III SBIR PROJECT OBJECTIVES

The technical objectives of TACOM's Phase III SBIR effort are to design, fabricate, install/connect, test/analyze, display/demonstrate, and deliver two versions of an integrated (i.e., several components assembled together into a working) WRU prototype system: one version that can be fitted on a U.S. Army HMMWV (type or equivalent), and a second version for a U.S. Army 30kW Tactical Generator Set (referred to as 30 kW Generator hereinafter). The Contractor shall also design, fabricate, and deliver a WRU prototype system for the NLOS-C FCS demonstration vehicle (type or equivalent). *

C.3.0 SCOPE OF WORK

The Contractor, as an independent contractor and not as an agent of the Government, shall provide all necessary labor, services, facilities, and supplies, to complete the following tasks:

C.3.0.1 Perform a cost/benefit analysis, design, fabricate, install/connect, test/analyze, display/demonstrate, and deliver the following items:

One (1) WRU prototype systems installed on a U.S. Army HMMWV (type or equivalent). *
One (1) WRU prototype system with connectors for attaching the system to a U.S. Army 30 kW Generator.

The installed/attached WRU prototype systems must meet the performance requirements in Attachment 002, "Water Recovery Unit System Performance Requirements."

C.3.0.2 Design and fabricate one (1) WRU prototype system for the NLOS-C FCS demonstration vehicle (type or equivalent). The WRU prototype system must meet the performance requirements in Attachment 002, "Water Recovery Unit System Performance Requirements," and be capable of meeting Technology Readiness Level (TRL) 6 (System/Subsystem Model or Prototype Demonstration in a Relevant Environment). * * * *

C.3.1 WRU PROTOTYPE SYSTEMS FOR THE HMMWV, THE 30 kW GENERATOR, AND THE NLOS-C FCS DEMONSTRATION VEHICLE *

C.3.1.1 Cost/Benefit Analysis.

For the HMMWV-mounted and 30 kW Generator WRU prototype systems, perform a cost/benefit analysis comparing different variants of each component (e.g., a titanium heat exchanger versus a stainless steel heat exchanger) of the WRU prototype system. At a minimum, consider production, operation and maintenance, performance, and life span. Also, analyze the performance of the catalytic converter over the range of normal operating temperatures, and over the life span of the catalytic converter. Update the cost/benefit analysis, as necessary, during the project. *

C.3.1.1.1 For the HMMWV-mounted system, provide the interim and final cost/benefit analysis results in accordance with (IAW) Exhibit A, Contract Data Requirements List (CDRL), DD Form 1423, Data Item Nos. A003, "Interim Scientific and Technical Report, Year 1 and Year 2 Reports," and A004, "Final Scientific and Technical Report, Year 3 Report."

C.3.1.1.2 For the 30 kW Generator system, provide the interim and final cost/benefit analysis results IAW Exhibit A, CDRL, DD Form 1423, Data Item Nos. A003 "Interim Scientific and Technical Report, Year 2 Report," and A004, "Final Scientific and Technical Report, Year 3 Report."

* Revised by Modification P00002

C.3.1.2 Engineering Design Study.

For each prospective WRU prototype system, the Contractor shall perform an engineering design study for a WRU prototype system meeting the performance requirements in Attachment 002, "Water Recovery Unit System Performance Requirements." The WRU prototype system for the NLOS-C FCS demonstration vehicle must also be capable of meeting * Technology Readiness Level (TRL) 6 ((System/Subsystem Model or Prototype Demonstration in a Relevant Environment). *

C.3.1.2.1 For the HMMWV-mounted system, provide the results of the engineering design study IAW Exhibit A, CDRL, DD Form 1423, Data Item No. A004, "Final Scientific and Technical Reports, Year 3 Report." *

C.3.1.2.2 For the 30 kw Generator system, provide the results of the engineering design study IAW Exhibit A, CDRL, DD Form 1423, Data Item No. A003, "Interim Scientific and Technical Reports, Year 2 Report."

C.3.1.2.3 For the NLOS-C FCS demonstration vehicle, provide the results of the engineering design study IAW Exhibit A, * CDRL, DD Form 1423, Data Item No. A003, "Interim Scientific and Technical Reports, Year 2 Report," and Data Item No. A004, *

"Final Scientific and Technical Reports, Year 3 Report."

C.3.1.3 Design.

Based on the engineering design study for each prospective WRU prototype system, design a WRU prototype system. In addition, for the HMMWV-mounted and 30 kW Generator systems only, design a kit for installing/connecting the WRU * prototype system. Create a set of developmental design drawings and associated lists IAW American Society of Mechanical * Engineers (ASME) Y14.100, "Engineering Drawing and Related Documentation Practices," as tailored for this project (see Attachment 001, "Tailored Engineering Drawing Preparation Requirements"). Redesign and update design drawings and associated lists, as necessary, during the project. For the HMMWV-mounted, 30 kW Generator, and NLOS-C FCS systems, provide these items IAW Exhibit A, CDRL, DD Form 1423, Data Item No. A004, "Final Scientific and Technical Report, Year 3 Report."

C.3.1.4 Fabrication.

C.3.1.4.1 Fabricate one (1) WRU prototype system (with two (2) water storage containers) and connector parts for * installing the WRU system on a U.S. Army HMMWV (type or equivalent). *

C.3.1.4.2 Fabricate one (1) WRU prototype system (with a water storage container) and connector parts for attaching the WRU prototype system to a 30 kW Generator.

C.3.1.4.3 Fabricate one (1) WRU prototype system (with two (2) water storage containers) for the NLOS-C FCS * demonstration vehicle (type or equivalent). *

C.3.1.4.4 Fabricate fifty (50) prototypes of the water purification canister for testing. Fabricate the fifty (50) prototypes according to the following schedule: the first ten (10) prototypes by eighteen (18) months after award; * the second ten (10) prototypes by twenty (20) months after award; and the last thirty (30) prototypes by twenty-four * (24) months after award. (Note: the Contractor may use whatever prototype canisters it needs on this project, and shall deliver the rest to the Government by the end of this Contract).

C.3.1.5 Installation/Connection.

C.3.1.5.1 Install one (1) WRU prototype system on a U.S. Army HMMWV (type or equivalent). Complete the installation * by twenty-eight (28) months after award. *

C.3.1.5.2 Connect the WRU prototype system to a 30 kW Generator. Complete this connection by twenty-four (24) months after award.

C.3.1.6 Testing and Analysis.

Provide a test plan IAW Exhibit A, CDRL, DD Form 1423, Data Item No. A003, "Interim Scientific and Technical Reports, Year 1 Report," detailing the test objectives and criteria, test schedule, location, number, duration, and frequency of tests to validate that each WRU prototype system meets the performance requirements in Attachment 002, * "Water Recovery Unit System Performance Requirements." The test plan shall also include periodic, formal demonstrations to assess the technical progress and maturity of each system.

* Revised by Modification P00002

Note: The Contractor shall design and build the NLOS-C FCS WRU prototype system under this TACOM-Warren Contract, which will include some preliminary testing and analysis. Installation and operational testing and analysis of the NLOS-C FCS system, as described in Sections C.3.1.6.3 through C.3.1.6.5.2 below, will occur under a separate TACOM-Picatinny Contract. *

C.3.1.6.1 Test the HMMWV-mounted system in a real world environment (e.g., local roads and cross country), collecting condensate and data on speed, rpm, fuel use, and water yield. Collect water at the beginning, during, and at the end of vehicle operation to identify changes in condensate quality.

C.3.1.6.2 Test the 30 kW Generator system, collecting condensate and data on exhaust temperature, fuel use, energy efficiency, and generator load.

C.3.1.6.3 Test the WRU prototype systems using water from a natural fresh water source, such as a lake or river.

C.3.1.6.4 Analyze the performance of the WRU prototype systems under desert conditions (i.e., 120F and dew point of 40F) by conducting testing in an environmental test chamber to validate desert performance.

C.3.1.6.5 Analyze the exhaust condensate and purified water using a certified Environmental Protection Agency (EPA) water quality laboratory. Test water to ppt levels for emerging contaminants such as NDMA, furan, and dioxin. Perform all needed analysis and provide the following data as input for obtaining an Army Surgeon General's safety release allowing soldiers to drink the product water:

C.3.1.6.5.1 Analysis of the water quality from certified EPA laboratory.

C.3.1.6.5.2 Comparison of the Contractor's water quality test results to National Sanitation Foundation (NSF) International/American National Standards Institute (ANSI) Standards 53, "Drinking Water Treatment Units - Health Effects," and 61, "Drinking Water Systems Components - Health Effects."

C.3.1.6.6 For the HMMWV-mounted system, provide the test and analysis data IAW Exhibit A, CDRL, DD Form 1423, Data Item No. A004, "Final Scientific and Technical Reports, Year 3 Report." Test documentation shall include all data taken, general procedures of the tests conducted, equipment and instruments used, results, conclusions, recommendations and corrective action. *

C.3.1.6.7 For the 30 kW Generator system, provide the test and analysis data IAW Exhibit A, CDRL, DD Form 1423, Data Item No. A004, "Final Scientific and Technical Report, Year 3 Report." Test documentation shall include all data taken, general procedures of the tests conducted, equipment and instruments used, results, conclusions, recommendations and corrective action.

C.3.1.6.8 For the NLOS-C FCS system, provide the test and analysis data IAW Exhibit A, CDRL, DD Form 1423, Data Item No. A003, "Interim Scientific and Technical Report, Year 2 Report." Test documentation shall include all data taken, general procedures of the tests conducted, equipment and instruments used, results, conclusions, recommendations and corrective action. * * * *

C.3.1.7 Installation/Connection, Operation, and Maintenance Instructions.

For the HMMWV and 30 kW Generator WRU prototype systems, provide installation/connection, operation, and maintenance instructions IAW Exhibit A, CDRL, DD Form 1423, Data Item No. A004, "Final Scientific and Technical Report, Year 3 Report." Although the final electronic instructions are not due for delivery until late in Year 3, the Contractor shall provide draft hardcopy versions of these instructions for the HMMWV-mounted WRU displays/demonstrations starting in Year 1, and the 30 kW Generator WRU displays/demonstrations starting in Year 3 (see Section C.3.1.10 below). For the NLOS-C FCS WRU prototype system, the Contractor shall provide draft operation and maintenance instructions by Sep 03, with final operation and maintenance instructions due IAW Exhibit A, CDRL, DD Form 1423, Data Item No. A004, "Final Scientific and Technical Report, Year 3 Report." * * *

C.3.1.8 Spare Parts List.

For each WRU prototype system, provide a spare parts list for operating the system for 720 hours under desert conditions (i.e., 120F and dew point of 40F), IAW Exhibit A, CDRL, DD Form 1423, Data Item No. A004, "Final Scientific and Technical Report, Year 3 Report."

* Revised by Modification P00002

C.3.1.9 Manufacturing and Field Support Plans (Note: These are combined plans including both Manufacturing and Field Support data.)

C.3.1.9.1 For the HMMWV-mounted system, provide two (2) manufacturing and field support plans: one (1) plan for thirty-five (35) WRUs per year, and one (1) plan for three hundred and fifty (350) WRUs per year, IAW Exhibit A, CDRL, DD Form 1423, Data Item Nos. A003, "Interim Scientific and Technical Report, Year 2 Report," and A004, "Final Scientific and Technical Reports, Year 3 Report." The plan shall include data on facilities, equipment, labor mix, manufacturing lead times and processes, production rates and processes, suppliers, transportation, spare and repair parts, and estimated costs. *

C.3.1.9.2 For the 30 kW Generator system, provide two (2) manufacturing and field support plans for the WRU prototype system: one (1) plan for thirty-five (35) WRUs per year, and one (1) plan for three hundred and fifty (350) WRUs per year, IAW Exhibit A, CDRL, DD Form 1423, Data Item Nos. A003, "Interim Scientific and Technical Report, Year 2 Report," and A004, "Final Scientific and Technical Report, Year 3 Report." The plan shall include data on facilities, equipment, labor mix, manufacturing lead times and processes, production rates and processes, suppliers, transportation, spare and repair parts, and estimated costs.

C.3.1.9.3 For the NLOS-C FCS system, provide two (2) manufacturing and field support plans for the WRU prototype system: one (1) plan for thirty-five (35) WRUs per year, and one (1) plan for three hundred and fifty (350) WRUs per year, IAW Exhibit A, CDRL, DD Form 1423, Data Item Nos. A003, "Interim Scientific and Technical Report, Year 2 Report." The plan shall include data on facilities, equipment,labor mix, manufacturing lead times and processes, production rates and processes, suppliers, transportation, spare and repair parts, and estimated costs. *

C.3.1.10 WRU Displays/Demonstrations.

At the COR's request, the Contract shall display/demonstrate the WRU prototype systems. For the HMMWV-mounted system, expect about two (2) to four (4) displays/demonstrations per year, starting in Year 1. For the 30 kW Generator system, expect about one (1) to two (2) displays/demonstrations per year, starting in Year 2. For the NLOS-C FCS system, expect about one (1) to two (2) displays/demonstrations per year starting in Sep 03. The Contractor is responsible for the following activities: *

C.3.1.10.1 Transporting the HMMWV, the 30 kW Generator, and each WRU prototype system, spare parts, as necessary, and two (2) draft hardcopy sets of installation/connection, operation, and maintenance instructions to and from the display/demonstration site.

C.3.1.10.2 Preparing the display/demonstration site, the HMMWV, the 30 kW Generator, and the WRU prototype systems, as necessary, for the display/demonstration.

C.3.1.10.3 Displaying, demonstrating, and explaining each WRU prototype system's installation/connection operation, and maintenance instructions.

C.3.1.10.4 Keeping the HMMWV, the 30 kW Generator, and each WRU prototype system operational during 95-percent of the demonstration time.

C.3.1.10.5 Answering system-related questions.

C.3.1.11 Delivery.

C.3.1.11.1 For the HMMWV-mounted system, deliver one (1) installed WRU prototype systems (with two (2) water storage containers) by thirty-six (36) months after contract award. It IS necessary to install the WRU prototype systems on the HMMWV for delivery. *

C.3.1.11.2 For the 30 kW Generator system, deliver one (1) WRU prototype system (with a water storage container) and connectors for attaching the system to a 30 kW Generator by thirty-six (36) months after contract award. It IS NOT necessary to attach the WRU to the 30 kW Generator for delivery.

C.3.1.11.3 For the NLOS-C system, deliver one (1) WRU prototype system (with two (2) water storage containers) by thirty-six (36) months after award. *

C.3.1.11.4 Of the fifty (50) prototype water purification canisters made, deliver, by thirty-six (36) months after contract award, all of the canisters not used by the Contractor in performing this Contract.

* Revised by Modification P00002

C.3.2 WRU FOR THE FUTURE COMBAT SYSTEM (FCS)

C.3.2.1 Engineering Design Study.

The requirements from this Section have been incorporated into Section C.3.1.2 (Engineering Design Study), under Modification P00002. *

* Revised by Modification P00002

C.3.3 Other Data Deliverables.

C.3.3.1 The Contractor shall prepare and deliver a Program Plan IAW Exhibit A, CDRL, DD Form 1423, Data Item No. A001, "Program Plan." The COR shall measure the Contractor's performance against the Program Plan.

C.3.3.2 The Contractor shall prepare and deliver Contractor's Progress, Status and Management Reports IAW Exhibit A, CDRL, DD Form 1423, Data Item No. A002, "Contractor's Progress, Status and Management Report."

C.3.3.3 The Contractor shall prepare and deliver a performance specification for each version of the WRU prototype system (including all system components, the water storage container, and all installation parts and connectors) IAW Exhibit A, CDRL, DD Form 1423, Data Item No. A004, "Final Scientific and Technical Report, Year 3 Report."

C.3.4 Meetings.

C.3.4.1 Kick-Off Meeting. The Contractor shall conduct a one (1) day meeting at its site within three (3) months after contract award to review initial progress on the project, and to discuss the Contractor's plan for accomplishing the remaining Contract requirements.

C.3.4.2 Review Meetings. The Contractor shall conduct a one (1) day meeting at both twelve (12) months and twenty-four (24) months after contract award to review interim project results, and to discuss the work proposed for the next year.

*** END OF NARRATIVE C 001 ***

SECTION F - DELIVERIES OR PERFORMANCE

F.3 Hardware and Software

F.3.1 The Contractor shall deliver all hardware required by this Contract, F.O.B. Destination, to the following address:

Dr. Jay Dusenbury, AMSTA-TR-D/210
U.S. Army Tank-automotive and Armaments Command (TACOM)
6501 E. 11 Mile Rd.
Warren, Michigan 48397-5000

(586) 574-4145

F.3.1.1 For the HMMWV-mounted system, deliver one (1) installed WRU prototype systems (with two (2) water storage containers) * by thirty-six (36) months after contract award. It IS necessary to install the WRU prototype systems on the HMMWV for delivery. *

F.3.1.2 For the 30 kW Generator system, deliver one (1) WRU prototype system (with a water storage container) for and connectors for attaching the system to a 30 kW Generator by thirty-six (36) months after contract award. It IS NOT necessary to attach the WRU to the 30 kW Generator for delivery.

F.3.1.3 For the NLOS-C system, deliver one (1) WRU prototype system (with two (2) water storage containers) by thirty-six (36) * months after award. *

F.3.1.4 Of the fifty (50) prototype water purification canisters made, the Contractor shall deliver, by thirty-six (36) months * after contract award, all water purification canisters not used by the Contractor in performing this Contract.

F.3.2 The Contractor shall submit all data electronically, in accordance with Exhibit A, Contract Data Requirements List (CDRL), DD Form 1423.

F.4 Period of Performance

The Contract's period of performance shall be thirty-six (36) months from the date of Contract award. Year 1 shall end twelve (12) months after award; Year 2 shall end twenty-four (24) months after award; and Year 3 shall end thirty-six (36) months after award.

* Revised by Modification P00002

*** END OF NARRATIVE F 001 ***

SECTION G - CONTRACT ADMINISTRATION DATA

LINE ITEM	PRON/ AMS CD	ACRN	OBLG STAT/ JOB ORD NO	PRIOR AMOUNT	INCREASE/DECREASE AMOUNT	CUMULATIVE AMOUNT
0001AC	E132C336EH	AC	1	$ 0.00	$ 500,000.00	$ 500,000.00
	622601H9111		32C336			
				NET CHANGE	$ 500,000.00	

SERVICE NAME	NET CHANGE BY ACRN	ACCOUNTING CLASSIFICATION	ACCOUNTING STATION	INCREASE/DECREASE AMOUNT
Army	AC	21 32040000036D7675P622601255Y S20113	W56HZV	$ 500,000.00
			NET CHANGE	$ 500,000.00

	PRIOR AMOUNT OF AWARD	INCREASE/DECREASE AMOUNT	CUMULATIVE OBLIG AMT
NET CHANGE FOR AWARD:	$ 1,837,732.00	$ 500,000.00	$ 2,337,732.00

* G.1 CONTRACTOR: SPECIAL BILLING INSTRUCTIONS:

* G.1.1 The Contractor shall bill to the alpha numeric Sub-Line Item Number (SLIN) level and ACRN under the four-digit Contract Line Item Number (CLIN), see Section B, for which the work effort was performed.

* G.1.2 If multiple SLINs exist on the same four-digit major CLIN, the Contractor shall determine which alpha-numeric SLIN contains the oldest fiscal year money and invoice against the SLIN containing the oldest money, until fully billed.

* G.1.3. To determine the fiscal year of funds, refer to the "Job Order Number" (JON) column that applies to ALL funding under the four digit CLIN, as shown in Section G - Contract Administration Data. The first digit of the JON represents the fiscal year. (For example, CLIN 0001 is funded by SLINs 0001AA, and 0001AB. If JON: 22C334 is associated with 0001AA and JON: 32C205, associated with 0001AB, SLIN 0001AA is FY 2002 funding and shall be invoiced prior to invoicing against SLIN 0001AB, which is FY 2003 funding.)

* G.2 DFAS: SPECIAL PAYMENT INSTRUCTIONS:

DFAS will make payments as billed by the contractor.

* Clauses added by Mod P00002

*** END OF NARRATIVE G 001 ***

SECTION H - SPECIAL CONTRACT REQUIREMENTS

H.17 GOVERNMENT-FURNISHED INFORMATION

This Section has been deleted under Modification P00002. *

H.18 NONDISCLOSURE OF SENSITIVE, PROPRIETARY, AND/OR SOURCE SELECTION INFORMATION

The Contractor recognizes that in performing this contract it may have access to certain sensitive, proprietary, and/or source selection information. The Contractor agrees to use and examine this information exclusively for the performance of this contract, to make no copies of, and permit no outside access to, such information during contract performance, and to take the necessary steps, in accordance with Government regulations, to prevent disclosure of such information to any unauthorized party inside or outside the Government. Contractor personnel shall not engage in any other action, venture, or employment wherein sensitive, proprietary and/or source selection information accessed while performing this contract will be used for the profit of any party.

H.19 GOVERNMENT-FURNISHED PROPERTY

Upon Contract award, the Government will furnish the Contractor with the following property for use in performing this Contract:

> 1994 HMMWV (Vehicle Identification No. 137YA8334RE152967)
> Carbonization Furnace
> Curing Furnace
> TOC Analyzer
> UV-VIS Spectrometer
> pH and Conductivity Meter

By 30 Sep 02, the Government will provide the Contractor with an Army 30 kW Tactical Generator Set, for use in performing this Contract.

Under Modification P00002, the Government will no longer provide the Contractor with a second Army HMMWV for use in performing this Contract. *

Upon Contract completion, the Contractor shall promptly return the property to the following location:

Dr. Jay Dusenbury, AMSTA-TR-D/210
U.S. Army Tank-automotive and Armaments Command (TACOM)
6501 E. 11 Mile Rd.
Warren, MI 48397-5000

Prior to returning these items, the Contractor shall coordinate delivery details with the Contracting Officer's Representative (COR).

* Revised by Modification P00002.

*** END OF NARRATIVE H 001 ***

Name of Offeror or Contractor: THE LEXINGTON CARBON COMPANY, LLC

SECTION J - LIST OF ATTACHMENTS

List of Addenda	Title	Date	Number of Pages	Transmitted By
Exhibit A	CONTRACT DATA REQUIREMENTS LIST (DD FORM 1423) AND RELATED DATA ITEM DESCRIPTIONS (DD FORM 1664)	15-APR-2002	006	
Attachment 002	PERFORMANCE REQUIREMENTS: WRU PROTOTYPE SYSTEM	15-APR-2002	002	

CONTRACT DATA REPORTING LIST (DD Form 1423) Form Approval OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 440 hours per response, including the time for retrieving instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. Please DO NOT RETURN your form to either of these addresses. Send completed form to the Government Issuing Contracting Officer for the Contract No. listed in Block E.

A. CONTRACT LINE ITEM NO.: 0002
B. EXHIBIT.....: A
C. CATEGORY.....: Phase III SBIR Program
D. SYSTEM/ITEM.....:
E. CONTRACT NO.....: DAAE07-02-C-L055
F. CONTRACTOR.....: LexCarb LLC

1. DATA ITEM NO.....: A001
2. TITLE OF DATA ITEM....: Program Plan
3. SUBTITLE.....:

4. AUTHORITY.....: DI-MGMT-80909(T)
5. CONTRACT REFERENCES...: Section C.3.3.1
6. REQUIRING OFFICE.....: AMSTA-TR-D/210
9. DIST. STATEMENT REQUIRED:
12. DATE OF FIRST SUB: See Block 16

7. DD250 REQ.....: DD
10. FREQUENCY: See Block 16
13. DATE of SUBS. SUB: See Block 16
8. APP CODE.....:
11. AS OF DATE:

14. DISTRIBUTION	A. ADDRESSES	B. COPIES: DRAFT	FINAL
Jay Dusenbury, Contracting Officer's Representative (COR), E-mail: DusenburJ@tacom.army.mil		1	1
Robert Beardslee, Contract Specialist, E-mail: beardslr@tacom.army.mil			1
James Schwerman, Administrative Contracting Officer, E-mail: jschwerman@dcmde.dcma.mil			1
	15. TOTAL:	1	1 *

* In distributing the electronic report, according to the schedule in Block 16 below, the Contractor shall deliver one (1) copy to the Government, sent to Messrs. Dusenbury's, Beardslee's, and Schwerman's e-mail addresses.

16. REMARKS: The Contractor shall deliver one (1) draft "Program Plan" thirty (30) days after contract award. The COR shall review the draft report and return it to the Contractor within seven (7) days of receipt with comments. The Contractor shall submit one (1) final "Program Plan" within fourteen (14) days after receipt of draft comments.

The Contractor shall update its "Program Plan" to delete the delivery of one (1) Water Recovery Unit (WRU) prototype system for a High Mobility Multi-Purpose, and add the delivery of one (1) WRU prototype system for the Non-Line-of-Sight Cannon (NLOS-C) Future Combat Vehicle, including any other changes resulting from revising these deliveries. The Contractor shall deliver a draft updated "Program Plan" by fifteen (15) days after contract modification P00002 issuance. The COR shall review the draft updated "Program Plan" and return it to the Contractor within seven (7) days of receipt with comments. The Contractor shall submit one (1) final updated "Program Plan" within seven (7) days after receipt of draft comments. **

Submit reports electronically, in the Contractor's format. The files shall be MS Windows 95/MS Office 97 Professional software compatible. If electronic mail is not workable, other acceptable methods of delivery are as follows: file transfer protocol, 3.5 HD floppy disk, CD ROM, or IOMEGA Zip Disk. The COR is responsible for accepting or rejecting the draft and final reports.

See the data item description (DI-MGMT-80909), at the internet address below, for instructions on completing the required report. Note Tailoring: In paragraph 10.1, delete the following sentences: "The submission shall be securely bound 8 1/2 X 11 inch white paper. One way foldouts may be used for graphic material."

http://131.82.253.19/docimages/0001/49/93/DI80909.PD0 **

17. PRICE GROUP:
18. ESTIMATED TOTAL PRICE:

** Revised by Modification P00002

1. DATA ITEM NO.....: A002
2. TITLE OF DATA ITEM....: Contractor's Progress, Status, and Management Report
3. SUBTITLE.....: Phase III SBIR Progress Reports

4. AUTHORITY.....: DI-MGMT-80227(T)
5. CONTRACT REFERENCES...: Section C.3.3.2
6. REQUIRING OFFICE.....: AMSTA-TR-D/210
9. DIST. STATEMENT REQUIRED:
12. DATE OF FIRST SUB: See Block 16

7. DD250 REQ.....: LTR
10. FREQUENCY: See Block 16
13. DATE of SUBS. SUB: See Block 16
8. APP CODE.....:
11. AS OF DATE:

14. DISTRIBUTION	A. ADDRESSES	B. COPIES: DRAFT	FINAL
Jay Dusenbury, Contracting Officer's Representative (COR), E-mail: DusenbuJ@tacom.army.mil			1
Robert Beardslee, Contract Specialist, E-mail: beardslr@tacom.army.mil			1
James Schwerman, Administrative Contracting Officer, E-mail: jschwerman@dcmde.dcma.mil			1
		15. TOTAL:	1 *

* In distributing the electronic report, according to the schedule in Block 16 below, the Contractor shall deliver one (1) copy to the Government, sent to Messrs. Dusenbury's, Beardslee's, and Schwerman's e-mail addresses.

16. REMARKS: The Contractor shall deliver a report every other month, starting sixty (60) days after the contract award date, in accordance with (IAW) Data Item Description (DID) DI-MGMT_80227(T) (Contractor's Progress, Status, and Management Report). Submit reports electronically, in the Contractor's format. The files shall be MS Windows 95/MS Office 97 Professional software compatible. If electronic mail is not workable, other acceptable methods of delivery are as follows: file transfer protocol, 3.5 HD floppy disk, CD ROM, or IOMEGA Zip Disk. The COR is responsible for accepting or rejecting the Contractor's Progress, Status, and Management Reports. See DID DI-MGMT-80227, at the internet address below, for instructions on completing the required report. Note Tailoring: Delete paragraphs 10.2, and 10.3 l from DID DI-MGMT-80227.

http://131.82.253.19/docimages/0001/48/17/DI80227.PD8 **

17. PRICE GROUP:
18. ESTIMATED TOTAL PRICE:

** Revised by Modification P00002

1. DATA ITEM NO.....: A003
2. TITLE OF DATA ITEM....: Interim Scientific and Technical Reports
3. SUBTITLE.....: Year 1 and Year 2 Technical Reports
4. AUTHORITY.....: DI-MISC-80711A(T)
5. CONTRACT REFERENCES...: Section C (see Block 16)
6. REQUIRING OFFICE.....: AMSTA-TR-D/210
9. DIST. STATEMENT REQUIRED:
12. DATE OF FIRST SUB: See Block 16
7. DD250 REQ.....: DD
10. FREQUENCY: See Block 16
13. DATE of SUBS. SUB: See Block 16
8. APP CODE.....:
11. AS OF DATE:

14. DISTRIBUTION	A. ADDRESSES	B. COPIES: DRAFT	FINAL
	Jay Dusenbury, Contracting Officer's Representative (COR), E-mail: DusenbuJ@tacom.army.mil	1	1
	Robert Beardslee, Contract Specialist, E-mail: beardslr@tacom.army.mil		1
	James Schwerman, Administrative Contracting Officer, E-mail: jschwerman@dcmde.dcma.mil		1
	15. TOTAL:	1	1 *

* In distributing the electronic report, according to the schedule in Block 16 below, the Contractor shall deliver one (1) copy to the Government, sent to Messrs. Dusenbury's, Beardslee's, and Schwerman's e-mail addresses.

16. REMARKS: The Contractor shall deliver two (2) draft "Interim Scientific and Technical Reports:" the first report (i.e., Year 1 report) is due ten (10) months and two (2) weeks after contract award, and the second report (i.e., Year 2 report) is due twenty-two (22) months and two (2) weeks after contract award. Besides the data required by DID DI-MISC-80711A(T), the interim reports shall include the following information:

Year 1 Report: Interim Cost-Benefit Analysis comparing different variants of each component of the HMMWV-mounted Water Recovery Unit (WRU) prototype system: Section C.3.1.1.1

Test Plan for the HMMWV-mounted, 30 kW Generator, and Non-Line-of-Sight Cannon (NLOS-C) Future Combat System (FCS) demonstration vehicle WRU prototype systems: Section C.3.1.6 **

Year 2 Report: Interim Cost-Benefit Analysis comparing different variants of each component of the WRU prototype systems for the HMMWV and the 30 kW Generator: Sections C.3.1.1.1 and C.3.1.1.2

Engineering Design Study of an integrated WRU for an Army 30 kW Tactical Generator Set: Section C.3.1.2.2

Engineering Design Study of an integrated WRU for a NLOS-C FCS demonstration vehicle: Section C.3.1.2.3 **

Test Results on the WRU prototype system for a NLOS-C FCS demonstration vehicle: Section C.3.1.6.7 **

Interim Manufacturing and Field Support Plan for the HMMWV-mounted WRU prototype system: Section C.3.1.9.1 **

Interim Manufacturing and Field Support Plan of the WRU prototype system for the 30 kW Generator: Section C.3.1.9.2

Interim Manufacturing and Field Support Plan of the WRU prototype system for the NLOS-C FCS demonstration vehicle: Section C.3.1.9.3 **

The COR shall review each draft report and return it to the Contractor within fifteen (15) days of receipt with comments. For each draft report, the Contractor shall submit a final "Interim Scientific and Technical Report" within thirty (30) days after receipt of draft comments.

Submit reports electronically, in the Contractor's format. The files shall be MS Windows 95/MS Office 97 Professional software compatible. If electronic mail is not workable, other acceptable methods of delivery are

as follows: file transfer protocol, 3.5 HD floppy disk, CD ROM, or IOMEGA Zip Disk. The COR is responsible for accepting or rejecting the draft and final "Interim Scientific and Technical Reports."

See the data item description (DI-MISC-80711A), at the internet address below, for instructions on completing the required report. Note Tailoring: Delete paragraph 10.2 from DID DI-MISC-80711A.

http://131.82.253.19/docimages/00002/27/88/80711A.PD4 **

17. PRICE GROUP: 18. ESTIMATED TOTAL PRICE:

** Revised by Modification P00002

1. DATA ITEM NO.....: A004
2. TITLE OF DATA ITEM....: Final Scientific and Technical Report
3. SUBTITLE.....: Year 3 Technical Report
4. AUTHORITY.....: DI-MISC-80711A(T)
5. CONTRACT REFERENCES...: Section C (see Block 16)
6. REQUIRING OFFICE.....: AMSTA-TR-D/210
9. DIST. STATEMENT REQUIRED:
12. DATE OF FIRST SUB: See Block 16
7. DD250 REQ.....: DD
10. FREQUENCY: See Block 16
13. DATE of SUBS. SUB: See Block 16
8. APP CODE.....:
11. AS OF DATE:

14. DISTRIBUTION	A. ADDRESSES	B. COPIES: DRAFT	FINAL
	Jay Dusenbury, Contracting Officer's Representative (COR), E-mail: DusenbuJ@tacom.army.mil	1	1
	Robert Beardslee, Contract Specialist, E-mail: beardslr@tacom.army.mil		1
	James Schwerman, Administrative Contracting Officer, E-mail: jschwerman@dcmde.dcma.mil		1
	Defense Technical Information Center (DTIC), E-mail: sbir@dtic.mil		1
	15. TOTAL:	1	2 *

* In distributing the electronic report, according to the schedule in Block 16 below, the Contractor shall deliver one (1) copy to the Government, sent to Messrs. Dusenbury's, Beardslee's, and Schwerman's e-mail addresses. The Contractor shall send the second copy, with the completed Standard Form (SF) 298 cover sheet, to DTIC's e-mail address. See Block 16 below for more information on the SF 298 cover sheet.

16. REMARKS: The Contractor shall deliver one (1) draft "Final Scientific and Technical Report" thirty-three (33) months and two (2) weeks after after contract award. Besides the data required by DID DI-MISC-80711A(T), this report shall include the following information:

Year 3 Report: Final Cost-Benefit Analysis comparing different variants of each component of the WRU prototype systems for the High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) and the 30 kW Generator: Sections C.3.1.1.1 and C.3.1.1.2

Engineering Design Study of a WRU prototype system that can be fitted onto an Army HMMWV: Section C.3.1.2.1 **

Engineering Design Study of an integrated WRU for a NLOS-C FCS demonstration vehicle: Section C.3.1.2.3 **

Developmental Design Drawings and Associated Lists for the HMMWV-mounted, 30 kW Generator, and Non-Line-of-Sight Cannon (NLOS-C) WRU prototype systems: Section C.3.1.3 **

Test Results for HMMWV-mounted WRU prototype system: Section C.3.1.6.6 **

Test Results on the WRU prototype system for 30 the kW Generator: Section C.3.1.6.7

Installation/Connection, Operation, and Maintenance Instructions for the HMMWV-mounted and 30 kW Generator WRU prototype systems: Section C.3.1.7. Operation and Maintenance Instructions for the NLOS-C WRU prototype system: Section C.3.1.7. Deliver these instructions as three separate appendixes to the "Final Scientific and Technical Report, Year 3 Report:" one appendix for the HMMWV-mounted WRU prototype system, one appendix for the 30 kw Generator WRU prototype system, and one appendix for the NLOS-C WRU prototype system. **

Spare Parts List for the HMMWV-mounted, 30 kW Generator, and NLOS-C WRU prototype systems: Section C.3.1.8 **

Final Manufacturing and Field Support Plan for the HMMWV-mounted WRU prototype system: Section C.3.1.9.1 **

Final Manufacturing and Field Support Plan of the WRU prototype system for the 30 kW Generator: Section C.3.1.9.2

Performance Specifications for the HMMWV-mounted, 30 kW Generator, and NLOS-C WRU prototype systems: Section C.3.3.3. Prepare these performance specification IAW MIL-STD 961D(1) (DoD Standard Practice for Defense Specifications). You may access MIL-STD 961D at the following web site: http://astimage.daps.dla.mil/docimages/0000/40/89/961D.PD7, and its Change Notice 1 at the following web site: http:/astimage.daps.dla.mil/docimages/0000/40/89/36063.PD6. **

The COR shall review the draft report and return it to the Contractor within fifteen (15) days of receipt with comments. The Contractor shall submit one (1) "Final Scientific and Technical Report" within thirty (30) days after receipt of draft comments.

Submit reports electronically, in the Contractor's format. The files shall be MS Windows 95/MS Office 97 Professional software compatible. If electronic mail is not workable, other acceptable methods of delivery are as follows: file transfer protocol, 3.5 HD floppy disk, CD ROM, or IOMEGA Zip Disk. The COR is responsible for accepting or rejecting the draft and final reports. Upon COR acceptance of the final report, the Contractor shall provide a copy of that approved final report, with a completed SF 298 (Report Documentation Page) cover sheet, to DTIC in portable data file (.pdf) format.

For each unclassified report, the Contractor shall fill in Block 12a (Distribution/Availability Statement) of the SF 298 with one of the following statements:

(a) Approved for public release; disctribution unlimited.

(b) Distribution authorized to U.S. Government Agencies only; contains proprietary information

Note: After reviewing the Contractor's entry in Block 12a, TACOM has final responsibility for assigning a distribution statement.

Block 13 (Abstract) of the SF 298 must include the first sentence, "Report developed under SBIR contract for topic A00-170." The abstract must identify the purpose of the work and briefly describe the work carried out, the finding or results, and the potential applications of the effort. Since the abstract will be published by the Department of Defense (DoD), it must not contain any proprietary or classified data.

Block 14 (Subject Terms) of the SF 298 must include the term "SBIR Report."

See the data item description (DI-MISC-80711A), at the internet address below, for instructions on completing the required report. Note Tailoring: Delete paragraph 10.2 from DID DI-MISC-80711A.

http://131.82.253.19/docimages/0002/27/88/80711A.PD4 **

You may download the SF 298 from the following internet address:

http://web1.whs.osd.mil/icdhome/SFEFORMS.HTM

17. PRICE GROUP: 18. ESTIMATED TOTAL PRICE:

** Revsied by Modification P00002

SYSTEM PERFORMANCE REQUIREMENTS: WRU PROTOTYPE SYSTEMS

1. This establishes performance requirements for three versions of an Water Recover Unit (WRU) prototype system: one version that can be fitted on a U.S. Army (equivalent or type) High Mobility Multi-Purpose Wheeled Vehicle (HMMWV), a second version for attaching to a U.S. Army 30 kW Tactical Generator Set, and a third version that can be fitted on a Non-Line-of-Sight Cannon (NLOS-C) Future Combat System (FCS) demonstration vehicle. *

2. The required performance capabilities for all three versions of the WRU prototype system are as follows: *

a. Size. The volume of each WRU prototype sytem shall be from 3.25 cubic feet (ft.) to 5 cubic ft. per gallon (gal.) per hour (hr.), for water production rates of at least 1 gal. per hr. (gal./hr). Volume includes all WRU-related parts (except the water storage container) added to the basic HMMWV, the basic 30 kW Generator, or the NLOS-C FCS demonstration vehicle. *

b. Weight. The weight of each WRU prototype system shall be from 40 lbs. to 70 lbs. per gal. of water produced per hr., for water production rates of at least 1 gal./hr. Weight includes all WRU-related parts (except the water storage container) added to the basic HMMWV, the basic 30 kW Generator, or the basic NLOS-C FCS demonstration vehicle. *

c. Location (for HMMWV and NLOS-C only): The WRU prototype system shall be contained within (i.e., must not stick out beyond) the frame of the HMMWV and NLOS-C respectively. *

d. Water Production. Each WRU prototype system shall produce from 0.55 to 0.70 gal. of water per gal. of diesel (gal./gal.) consumed.

e. Effect on Engine. Each WRU prototype system shall decrease the maximum net power output of the engine by no more than 5-percent at 0.55 gal./gal. to no more than 7-percent at 0.7 gal./gal.

f. Reliability. Each WRU shall produce 200 gal. of purified water before any WRU component requires replacement.

g. Water Purification Canister. The water purification canister shall be no larger than 6 cubic inches per gal. (in./gal.) of water produced, and be able to purify 200 gal. of water before replacement of any expendable component.

h. Purify Fresh Water. Each WRU prototype system shall be able to purify water from a natural fresh water source, such as a lake or river.

i. Water Purity. Each WRU prototype system shall produce drinking water that meets the Tri-service long-term consumption quality standards specified in the Technical Bulletin (TB) Med 577 Occupational and Environmental Health: Sanitary Control and Surveillance of Field Water Supplies, and the water must have a TOC from 0.1 parts per million (ppm) to 0.5 ppm, and no N-Nitroso Dimethylamine (NDMA) at parts per trillion (ppt) levels.

j. Disinfection System. Each WRU prototype system shall have a disinfection system that meets TB Med 577 standards of a 2 ppm chlorine residual, without the need for storing hazardous chemicals on either the HMMWV, the 30 kw Generator, the NLOS-C FCS demonstration vehicle, or the WRU prototype system. *

k. Canister Change Notification. Each WRU prototype system shall have a method for vehicle operators to determine when to change the water purification canister.

l. Water Quality Monitor. Each WRU prototype system shall have a method for vehicle operators to monitor water quality.

m. Connection. For the HMMWV and 30 kW Generator only, each WRU prototype system shall include parts for connecting the system to its respective end item (i.e, HMMWV or 30 kW Generator). *

n. Storage and Transportation Temperatures. Each version of the WRU shall have the ability to be stored and transported from -25 to 140 degrees Fahrenheit when dry (i.e., when the WRU does not have water in it), and from 32 to 140 degrees Fahrenheit when wet (i.e., when the WRU has water in it).

o. Storage Length. Each new WRU prototype system shall have a storage life of at least three (3) years.

p. Dispensing Water. Each WRU prototype system shall have the ability to dispense water into both a standard military canteen and a five (5) gal. water can.

q. Water Storage. Each WRU prototype system shall include a container for storing purified water.

q. On/Off. Each WRU prototype system shall include a means of turning the system on and off, to allow the system to operate only when desired.

r. Operating Requirements. All WRU prototype system requirements shall be met under desert conditions (i.e., 120F and dew point of 40F).

* Revised by Modification P00002